Gurukul International Multidisciplinary Research Journal (GIMRJ)*with* International Impact Factor 8.249
Peer Reviewed Journal
https://doi.org/10.69758/GIMRJ2407II0IV12P0029

e-ISSN No. 2394-8426
Special Issue Emerging Paradigms in Computational Intelligence
Issue–II(I), Volume–XII

PERSONAL HEALTHCARE CHATBOT FOR MEDICAL SUGGESTIONS USING ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

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Received on: *17 June ,2024* ***Revised on:*** *19 July ,2024* ***Published on:*** *31 July ,2024*

Abstract : Medical services is a lot of significant in each individual's life. In any case, counseling a specialist for every single medical problem is an extremely challenging errand. Before speaking with a doctor, we want to develop an AI- powered healthcare chatbot system that can identify a disease and provide basic information about it. We use Natural Language Processing (NLP) algorithm. Our chatbot uses NLP, a program that applies AI, to analyze and comprehend natural human language. The system provides text-text assistance to communicate with bot in a user- friendly manner. The chat bot also provides medical suggestions that can cure the disease based on user symptoms. Based on the symptoms Chatbot classifies the disease into a severe or negligible health problem. If it is a severe health problem the user will be advised to consult a doctor for a better treatment and if it is a negligible disease, it provides the medical assistance. The Chatbot can also give you medical prescriptions for health problems.

I. INTRODUCTION

Clinical registering examination is a recent fad for social occasion clinical insight and applying it to future expectations. Large information is the following enormous thing for medicalcare frameworks.Medical intelligence can be extracted from huge amounts of clinical data and used to build a proactive healthcare system that puts patient care first while cutting costs and lowering hospital readmissions. On the off chance that identified sufficiently early,numerous infections are reparable. Chatbot is a human- machine interface that talks or communicates with clients through text or voice. Medical chatbots can be used for a variety of purposes, including patient care, deep diagnosis of any specific condition, and the diagnosis of general diseases. Similar to how we have general practitioners and specialists in medicine, In this study, we mimic a similar condition using advanced NLU and ML algorithms to first diagnose a common disease using a text-to- text conversational Diabot, then that extended this research to the specialty of predicting diabetes.

II. RESEARCH METHODOLOGY

Literature Review:

Conduct a thorough literature review to understand existing order tracking systems and their limitations. Analyze the advantages of using telwind in developing modern web applications.

Requirement Gathering:

Identify and document the functional and non-functional requirements of the order tracker. Engage with potential users through surveys or interviews to understand their needs and expectations.

Feasibility Study:

Assess the technical, operational, and economic feasibility of developing the order tracker using telwind Evaluate the project's scope, timeline, and resource requirements.

3. Design

System Architecture:

Design the overall system architecture, including client-server interactions and database design.
Leverage telwind capabilities such as server-side rendering (SSR) and static site generation (SSG) to optimize performance and user experience.

UI/UX Design:
Create wireframes and prototypes to visualize the user interface.
Focus on user-friendly and intuitive design principles to enhance user engagement and satisfaction.

Data Model Design:
Develop a comprehensive data model to support the functionalities of the order tracker. Ensure data integrity and security through proper schema design and validation techniques.

4. Development

Technology Stack:
Use telwind as the primary framework for building the application.
Integrate other technologies such as React, telwind, and a database system (e.g. PostgreSQL) to support backend
Coding Standards:
Follow best practices in coding, including modularization, code reuse, and commenting.
Implement version control using Git for collaborative development and code management.

Feature Implementation:
Develop core features of the progress tracker such as user authentication, progress logging, goal setting, and reporting.
Utilize twlwind features like API routes for server-side functionality and dynamic routing.

5. Testing

Unit Testing:
Write and execute unit tests for individual components to ensure they function correctly in isolation.
Use testing frameworks like Jest and React Testing Library.

Integration Testing:
Conduct integration tests to verify that different components of the system work together seamlessly.
Focus on key functionalities and data flow between components.

User Acceptance Testing (UAT):
Involve end-users in the testing process to validate that the application meets their requirements and expectations.Collect feedback and make necessary adjustments.

Performance Testing:
Test the application's performance under various conditions to ensure it can handle expected user loads.
Use tools like Lighthouse and Web Vitals to measure performance metrics.

6. Deployment and Evaluation

Deployment:
Deploy the application to a production environment using a suitable platform (e.g., Vercel, AWS).Ensure continuous integration and continuous deployment (CI/CD) practices are in place for ongoing updates and

maintenance.

Monitoring and Maintenance:

Implement monitoring tools to track the application's performance and user activity.

Set up a maintenance plan to address bugs, security vulnerabilities, and feature enhancements.

Evaluation:

Conduct a post-deployment evaluation to assess the project's success and areas for improvement.

Collect and analyze user feedback to guide future development iterations.

III.RESULTS AND DISCUSSION

In the proposed solution, the main aim is to enhance disease prediction by introducing a threshold for symptom reporting confidence. Our approach ensures that disease predictions are provided only when the user's symptoms are reported with a confidence level exceeding 80%. As a result, the accuracy of our approach reaches approximately 82%, which is significantly higher compared to the low accuracy levels observed in existing systems. This improvement highlights the effectiveness and reliability of our suggested approach in accurately predicting diseases based on user- reported symptoms.

Once the user login, Chatbot asks for user details like enter user name. In our developed chatbot system, the user is prompted to enter their name and subsequently asked about any symptoms they may be experiencing, such as fever, cold, cough, and others. These entered details are then sent for processing, where advanced algorithms are employed to analyze and identify the specific type of disease that the user may be potentially facing.

Based on the symptoms user entered, chatbot finds the disease and explains problems caused by that particular disease. The chatbot utilizes the symptoms provided by the user to determine the potential disease. Upon analysis, if the identified disease is deemed major, the chatbot recommends that the user consult a doctor. This decision-making process enables the chatbot to provide tailored advice and guidance based on the severity of the identified disease, ensuring appropriate and personalized recommendations for the user's specific health situation.

Figure :

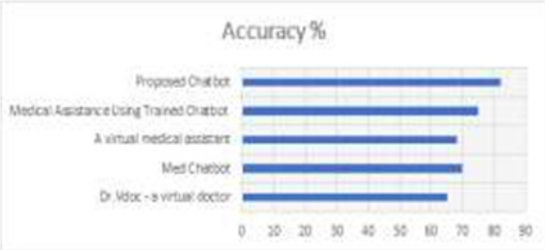

Fig.1

Name of Chatbot Model	Limitations	Accuracy
Dr.Vdoc: A Clinical Chatbot that Goes about as a Virtual Specialist	It is intended to recommend and give data on conventional drugs. It doesn't give a quick reaction.	65%
Med Chatbot: An UML based Chatbot for Clinical Understudies	It is designed in such a way that it can predict only a smaller number of diseases.	70%
Chatbot: A Virtual Medical Assistant	It is designed to cure people suffering with health interventions.	68%
Medical Assistance Using Trained Chatbot	It can foresee the infection in view of the side effects however doesn't give exact outcomes.	75%

Fig.2

ACKNOWLEDGMENT

The development of the Progress Tracker using the Next.js framework was a collaborative effort that involvedthe support and contributions of many individuals and organizations. We would like to express our sincere gratitude to the following:

Project Advisors and Mentors:

We are deeply grateful to our project advisors and mentors who provided invaluable guidance and expertise throughout the project. Their insights and feedback were crucial in shaping the direction and success of this project.

Development Team:

A heartfelt thank you to the development team for their dedication, hard work, and collaboration. Their technical skills and innovative thinking were essential in bringing the Progress Tracker to life.

User Participants:

We extend our appreciation to the users who participated in surveys, interviews, and testing phases. Their feedback and suggestions were instrumental in improving the application and ensuring it met user needs.

Family and Friends:

We are thankful to our families and friends for their unwavering support and encouragement throughout this project. Their understanding and patience were greatly appreciated during the demanding phases of development.

Educational Institutions:

We would like to thank our educational institutions for providing the necessary resources and environment conducive to research and development. The access to technical resources and academic support played asignificant role in the project's success.

Technical Tools and Platforms:

Special thanks to the providers of the technical tools and platforms we utilized, including GitHub for version control, Vercel for deployment, and for database management. These tools were critical in the development and deployment processes.

Reviewers and Editors:

We appreciate the efforts of the reviewers and editors who provided constructive criticism and suggestions to enhance the quality of our work. Their attention to detail helped in refining the final output.

III. CONCLUSION

Health care is the most important aspect of human life. But due to their busy lives people are unable to take care of their health which is leading to the major health diseases which are

also causing death of the people. To resolve this problem our proposed system is to create a chatbot which can predict the disease depending on the symptoms provided by the user and also classifies the disease into minor or major based on their severity. The chatbot also provides medical suggestions in the case of minor disease and it refers to a doctor in the case of major disease.

Based on a review of various papers, it is hypothesized that Chatbot usage is straightforward and accessible to anyone who knows how to type in their native language in either a portable application or a workplace version. A clinical chatbot provides individualized side effect analysis. Later on, the bot's aftereffect affirmation and assurance execution could be altogether improved by including support for progressively clinical features, for instance, region, length, and power of signs, and dynamically distinct secondary effect portrayal. The utilization of Customized Clinical partner strongly relies upon simulated intelligence estimations similarly as the planning data. At last, the execution of tweaked drug would successfully save various lives and make a clinical care among the people.

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